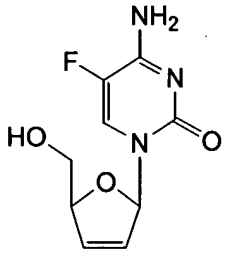
**Amendment to the Claims**

This listing of the claims will replace all prior versions, and listing, of claims in the application.

**Listing of Claims:**

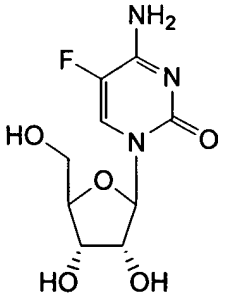
1. (Currently Amended) A process for the preparation of a compound of Formula (IV):



(IV)

comprising:

(1) contacting a compound of Formula (I):



(I)

with an acyl halide of Formula Q-C(=O)X, wherein:

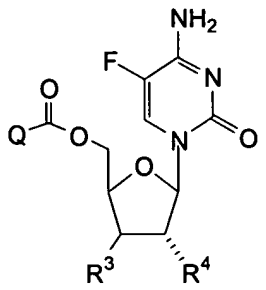
Q is 2-($R^1CH_2CO_2$)phenyl-, $R^1CH_2$-, or $R^1CH_2C(=O)OC(R^2)_2$–;

X is Cl, Br, or I;

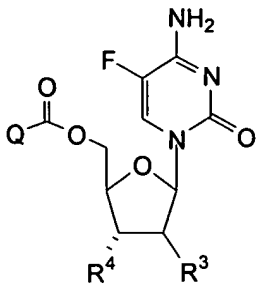
$R^1$ is H or $C_1$-$C_6$ alkyl;

$R^2$, at each occurrence, is independently selected from methyl, ethyl, and propyl;

in a suitable polar aprotic solvent to form a compound of Formula (II), a compound of Formula (II*), or a mixture of compounds of Formula (II) and (II*):



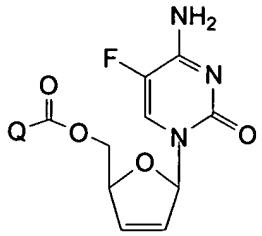
(II)



(II*)

wherein $R^3$ is X; and $R^4$ is $R^1CH_2C(=O)O$-;

(2) contacting the compound of Formula (II), the compound of Formula (II*), or the mixture of compounds of Formula (II) and (II*); with a suitable reducing agent in a suitable polar solvent, ~~optionally in the presence~~ in the absence of ~~a suitable~~ an acid catalyst, to form a compound of Formula (III):



(III); and

(3) contacting the compound of Formula (III) with a suitable base to form the compound of Formula (IV).

**2.** (Currently Amended) The process of Claim 1 for the preparation of a compound of Formula (IV), wherein:

in step (1) the acyl halide of Formula Q-C(=O)X comprises:

2-acetoxy-2-methyl-propionyl bromide, 2-(acetoxy)-2-methyl-butanoyl bromide, 2-(acetoxy)-2-ethyl-butanoyl bromide, or 2-(acetoxy)-2-methyl-pentanoyl bromide;

in step (1), the suitable polar aprotic solvent comprises one polar aprotic solvent or a combination of two or more polar aprotic solvents; and is selected from the group consisting of: methylene chloride, tetrahydrofuran, t-butyl methyl ether,

dimethoxy ethane, 2-methoxyethyl ether, dimethylformamide, dimethylacetamide, acetonitrile, ethyl acetate, and isopropyl acetate;

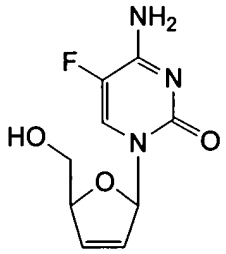
in step (2), the suitable reducing agent is selected from the group consisting of: Fe, Zn-Cu couple and Zn;

~~in step (2), the suitable acid catalyst, when present, is selected from the group consisting of: acetic acid, propanoic acid, butyric acid, benzoic acid, toluene sulfonic acid, HCl, HBr, HI, and $H_2SO_4$;~~

in step (2), the suitable polar solvent comprises one polar solvent or a combination of two or more polar solvents; and is selected from the group consisting of: methanol, ethanol, propanol, ethyl acetate, propyl acetate, butyl acetate, isopropyl acetate, acetonitrile, tetrahydrofuran, dimethoxy ethane, and 2-methoxyethyl ether; and

in step (3) the suitable base is selected from the group consisting of: sodium hydroxide, lithium hydroxide, potassium carbonate, sodium carbonate, sodium methoxide, sodium ethoxide, $C_3$-$C_6$ alkyl primary amine, ammonium hydroxide, and ammonium $C_1$-$C_6$ alkoxide.

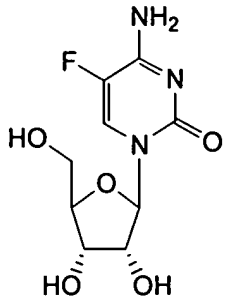
**3.** (Currently Amended) The process according to Claim 1, for the preparation of a compound of Formula (IV):




(IV)

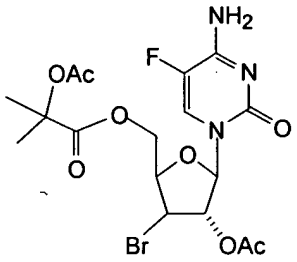
comprising:

(1) contacting a compound of Formula (I):

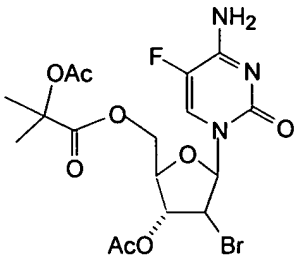


(I)

with 2-acetoxy-2-methyl-propionyl bromide in a suitable polar aprotic solvent to form a compound of Formula (II-a), a compound of Formula (II*-a), or a mixture of compounds of Formula (II-a) and (II*-a):

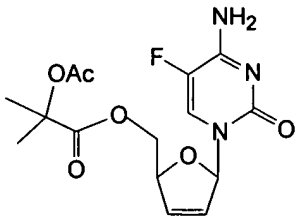


(II-a)



(II*-a)

(2) contacting the compound of Formula (II-a), the compound of Formula (II*-a), or the mixture of compounds of Formula (II-a) and (II*-a); with a suitable reducing agent in a suitable polar solvent, ~~optionally in the presence~~ in the absence of ~~a suitable~~ an acid catalyst, to form a compound of Formula (III-a):



(III-a); and

(3) contacting the compound of Formula (III-a) with a suitable base to form the compound of Formula (IV).

**4.** (Currently Amended) The process of Claim 3 for the preparation of a compound of

Formula (IV), wherein:

in step (1), the suitable polar aprotic solvent comprises one polar aprotic solvent or a combination of two or more polar aprotic solvents; and is selected from the group consisting of: methylene chloride, tetrahydrofuran, t-butyl methyl ether, dimethoxy ethane, 2-methoxyethyl ether, dimethylformamide, dimethylacetamide, acetonitrile, ethyl acetate, and isopropyl acetate;

in step (2), the suitable reducing agent is selected from the group consisting of: Fe, Zn-Cu couple and Zn;

~~in step (2), the suitable acid catalyst, when present, is selected from the group consisting of: acetic acid, propanoic acid, butyric acid, benzoic acid, toluene sulfonic acid, HCl, HBr, HI, and $H_2SO_4$;~~

in step (2), the suitable polar solvent comprises one polar solvent or a combination of two or more polar solvents; and is selected from the group consisting of: methanol, ethanol, propanol, ethyl acetate, propyl acetate, butyl acetate, isopropyl acetate, acetonitrile, tetrahydrofuran, dimethoxy ethane, and 2-methoxyethyl ether; and

in step (3) the suitable base is selected from the group consisting of: sodium hydroxide, lithium hydroxide, potassium carbonate, sodium carbonate, sodium methoxide, sodium ethoxide, $C_3$-$C_6$ alkyl primary amine, ammonium hydroxide, and ammonium $C_1$-$C_6$ alkoxide.

**5.** (Currently Amended) The process of Claim 4 for the preparation of a compound of Formula (IV), wherein:

in step (1), the suitable polar aprotic solvent comprises a combination of acetonitrile and ethyl acetate;

in step (2), the suitable reducing agent is Zn-Cu couple;

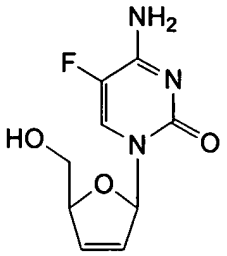
~~in step (2), the suitable acid catalyst, when present, is acetic acid;~~

in step (2), the suitable polar solvent comprises a combination of methanol and ethyl acetate; and

in step (3) the suitable base is sodium methoxide.

**6.** (Currently Amended) The process according to Claim 5, for the preparation of a

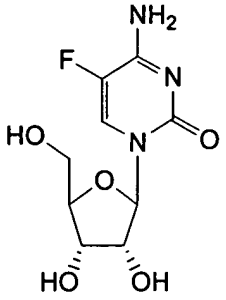
compound of Formula (IV):



(IV)

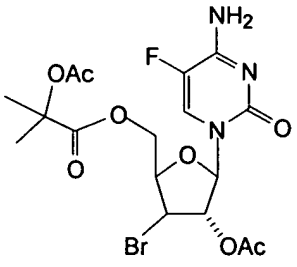
comprising:

(1) contacting a compound of Formula (I):

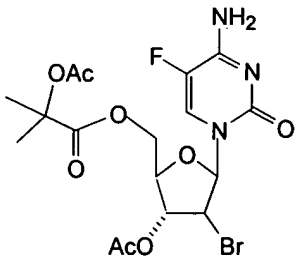


(I)

with 2-acetoxy-2-methyl-propionyl bromide in a suitable polar aprotic solvent comprising a combination of acetonitrile and ethyl acetate, wherein the ratio of acetonitrile to ethyl acetate is 1:4; to form a compound of Formula (II-a), a compound of Formula (II*-a), or a mixture of compounds of Formula (II-a) and (II*-a):

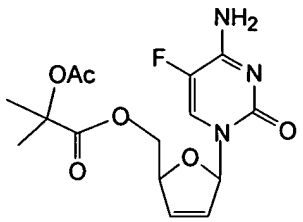


(II-a)



(II*-a)

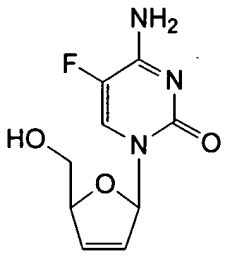
(2) contacting the compound of Formula (II-a), the compound of Formula (II*-a), or the mixture of compounds of Formula (II-a) and (II*-a); with Zn-Cu couple in a suitable polar solvent comprising a combination of methanol and ethyl acetate, wherein the ratio of methanol to ethyl acetate is in the range of 1:2 to 1:4~~; optionally in the presence of acetic acid~~, to form a compound of Formula (III-a):



(III-a); and

(3) contacting the compound of Formula (III-a) with sodium methoxide to form the compound of Formula (IV).

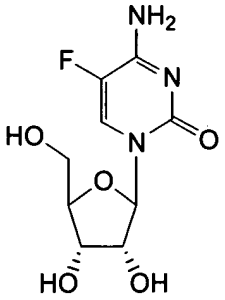
7. (Currently Amended) The process of Claim 1 for the preparation of a compound of Formula (IV):



(IV)

comprising:

(1) contacting a compound of Formula (I):



(I)

with an acyl halide of Formula Q-C(=O)X, wherein:

Q is $R^1CH_2C(=O)OC(R^2)_2$–;

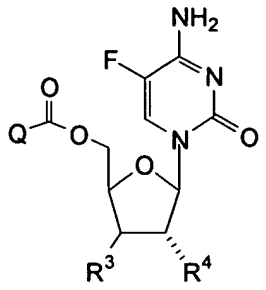
X is Cl, Br, or I;

$R^1$ is H, $CH_3$, $CH_2CH_3$, or $CH_2CH_2CH_3$;

$R^2$, at each occurrence, is independently selected from methyl, ethyl, and propyl;

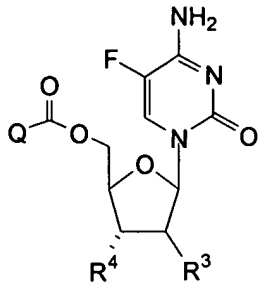
in a suitable polar aprotic solvent to form a compound of Formula (II) or a compound of

Formula (II*):



(II)

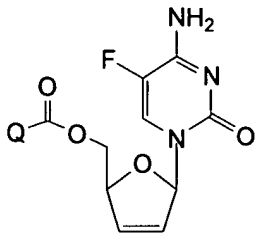
,



(II*)

wherein $R^3$ is X; and $R^4$ is $R^1CH_2C(=O)O$-;

(2) contacting the compound of Formula (II) or the compound of Formula (II*) with a suitable reducing agent in a suitable polar solvent, ~~optionally in the presence~~ in the absence of ~~a suitable~~ an acid catalyst, to form a compound of Formula (III):



(III); and

(3) contacting the compound of Formula (III) with a suitable base to form the compound of Formula (IV).

**8.** (Currently Amended) The process of Claim 7 for the preparation of a compound of Formula (IV), wherein:

in step (1) the acyl halide of Formula Q-C(=O)X comprises:

2-acetoxy-2-methyl-propionyl bromide, 2-(acetoxy)-2-methyl-butanoyl bromide, 2-(acetoxy)-2-ethyl-butanoyl bromide, or 2-(acetoxy)-2-methyl-pentanoyl bromide;

in step (1), the suitable polar aprotic solvent comprises

one polar aprotic solvent or a combination of two or more polar aprotic solvents; and is selected from the group consisting of: methylene chloride, tetrahydrofuran, t-butyl methyl ether, dimethoxy ethane, 2-methoxyethyl ether,

dimethylformamide, dimethylacetamide, acetonitrile, ethyl acetate, and isopropyl acetate;

in step (2), the suitable reducing agent is selected from the group consisting of: Fe, Zn-Cu couple and Zn;

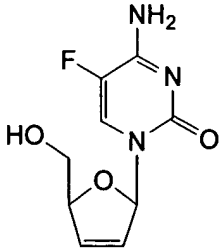
~~in step (2), the suitable acid catalyst, when present, is selected from the group consisting of: acetic acid, propanoic acid, butyric acid, benzoic acid, toluene sulfonic acid, HCl, HBr, HI, and $H_2SO_4$;~~

in step (2), the suitable polar solvent comprises

one polar solvent or a combination of two or more polar solvents; and is selected from the group consisting of: methanol, ethanol, propanol, ethyl acetate, propyl acetate, butyl acetate, isopropyl acetate, acetonitrile, tetrahydrofuran, dimethoxy ethane, and 2-methoxyethyl ether; and

in step (3) the suitable base is selected from the group consisting of: sodium hydroxide, lithium hydroxide, potassium carbonate, sodium carbonate, sodium methoxide, sodium ethoxide, $C_3$-$C_6$ alkyl primary amine, ammonium hydroxide, and ammonium $C_1$-$C_6$ alkoxide.

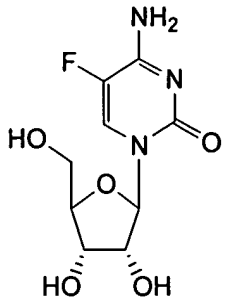
**9.** (Currently Amended) The process according to Claim 7, for the preparation of a compound of Formula (IV):




(IV)

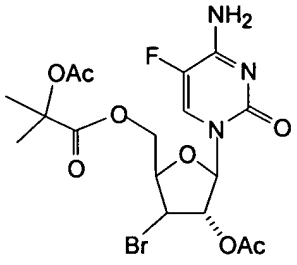
comprising:

(1) contacting a compound of Formula (I):

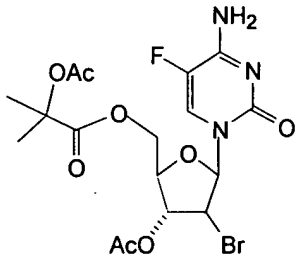


(I)

with 2-acetoxy-2-methyl-propionyl bromide in a suitable polar aprotic solvent to form a compound of Formula (II-a) or a compound of Formula (II*-a):

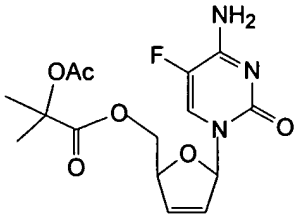


(II-a)



(II*-a)

(2) contacting the compound of Formula (II-a) or the compound of Formula (II*-a) with a suitable reducing agent in a suitable polar solvent, ~~optionally in the presence~~ in the absence of ~~a suitable~~ an acid catalyst, to form a compound of Formula (III-a):



(III-a); and

(3) contacting the compound of Formula (III-a) with a suitable base to form the compound of Formula (IV).

**10.** (Currently Amended) The process of Claim 9 for the preparation of a compound of Formula (IV), wherein:

in step (1), the suitable polar aprotic solvent comprises one polar aprotic solvent or a combination of two or more polar aprotic solvents; and is selected from the group

consisting of: methylene chloride, tetrahydrofuran, t-butyl methyl ether, dimethoxy ethane, 2-methoxyethyl ether, dimethylformamide, dimethylacetamide, acetonitrile, ethyl acetate, and isopropyl acetate;

in step (2), the suitable reducing agent is selected from the group consisting of: Fe, Zn-Cu couple and Zn;

~~in step (2), the suitable acid catalyst, when present, is selected from the group consisting of: acetic acid, propanoic acid, butyric acid, benzoic acid, toluene sulfonic acid, HCl, HBr, HI, and $H_2SO_4$;~~

in step (2), the suitable polar solvent comprises one polar solvent or a combination of two or more polar solvents; and is selected from the group consisting of: methanol, ethanol, propanol, ethyl acetate, propyl acetate, butyl acetate, isopropyl acetate, acetonitrile, tetrahydrofuran, dimethoxy ethane, and 2-methoxyethyl ether; and

in step (3) the suitable base is selected from the group consisting of: sodium hydroxide, lithium hydroxide, potassium carbonate, sodium carbonate, sodium methoxide, sodium ethoxide, $C_3$-$C_6$ alkyl primary amine, ammonium hydroxide, and ammonium $C_1$-$C_6$ alkoxide.

**11.** (Currently Amended) The process of Claim 10 for the preparation of a compound of Formula (IV), wherein:

in step (1), the suitable polar aprotic solvent comprises a combination of acetonitrile and ethyl acetate;

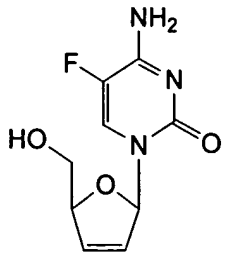
in step (2), the suitable reducing agent is Zn-Cu couple;

~~in step (2), the suitable acid catalyst, when present, is acetic acid;~~

in step (2), the suitable polar solvent comprises a combination of methanol and ethyl acetate; and

in step (3) the suitable base is sodium methoxide.

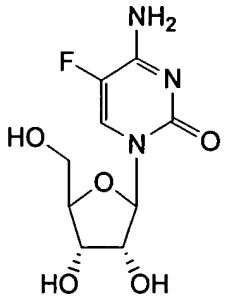
**12.** (Currently Amended) process according to Claim 11, for the preparation of a compound of Formula (IV):



(IV)

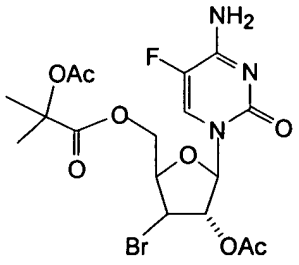
comprising:

(1) contacting a compound of Formula (I):

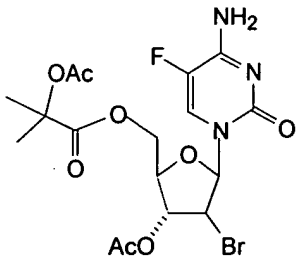


(I)

with 2-acetoxy-2-methyl-propionyl bromide in a suitable polar aprotic solvent comprising a combination of acetonitrile and ethyl acetate, wherein the ratio of acetonitrile to ethyl acetate is 1:4; to form a compound of Formula (II-a) or a compound of Formula (II*-a):

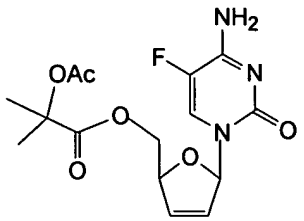


(II-a)



(II*-a)

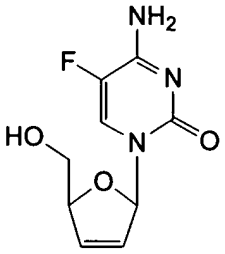
(2) contacting the compound of Formula (II-a) or the compound of Formula (II*-a); with Zn-Cu couple in a suitable polar solvent comprising a combination of methanol and ethyl acetate, wherein the ratio of methanol to ethyl acetate is in the range of 1:2 to 1:4~~; optionally in the presence of acetic acid~~, to form a compound of Formula (III-a):



(III-a); and

(3) contacting the compound of Formula (III-a) with sodium methoxide to form the compound of Formula (IV).

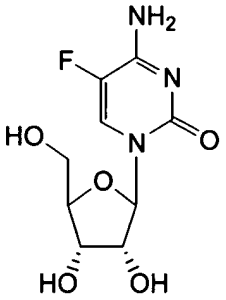
**13.** (Currently Amended) The process of Claim 1 for the preparation of a compound of Formula (IV):



(IV)

comprising:

(1) contacting a compound of Formula (I):



(I)

with an acyl halide of Formula Q-C(=O)X, wherein:

Q is $R^1CH_2C(=O)OC(R^2)_2$–;

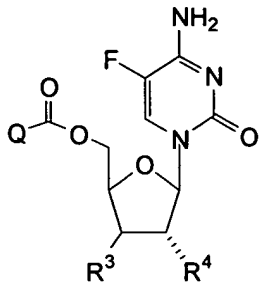
X is Cl, Br, or I;

$R^1$ is H, $CH_3$, $CH_2CH_3$, or $CH_2CH_2CH_3$;

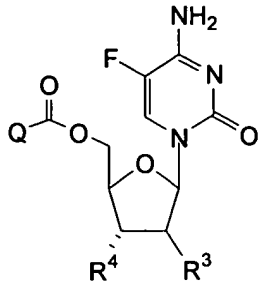
$R^2$, at each occurrence, is independently selected from methyl, ethyl, and propyl;

in a suitable polar aprotic solvent to form a mixture of compounds of Formula (II) and

(II*):



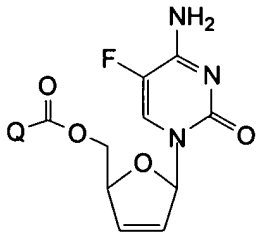
(II)



(II*)

wherein $R^3$ is X; and $R^4$ is $R^1CH_2C(=O)O$-;

(2) contacting the mixture of compounds of Formula (II) and (II*) with a suitable reducing agent in a suitable polar solvent, ~~optionally in the presence~~ in the absence of ~~a suitable~~ an acid catalyst, to form a compound of Formula (III):



(III); and

(3) contacting the compound of Formula (III) with a suitable base to form the compound of Formula (IV).

**14.** (Currently Amended) The process of Claim 13 for the preparation of a compound of Formula (IV), wherein:

in step (1) the acyl halide of Formula Q-C(=O)X comprises:

2-acetoxy-2-methyl-propionyl bromide, 2-(acetoxy)-2-methyl-butanoyl bromide, 2-(acetoxy)-2-ethyl-butanoyl bromide, or 2-(acetoxy)-2-methyl-pentanoyl bromide;

in step (1), the suitable polar aprotic solvent comprises one polar aprotic solvent or a combination of two or more polar aprotic solvents; and is selected from the group consisting of: methylene chloride, tetrahydrofuran, t-butyl methyl ether, dimethoxy ethane, 2-methoxyethyl ether, dimethylformamide,

dimethylacetamide, acetonitrile, ethyl acetate, and isopropyl acetate;

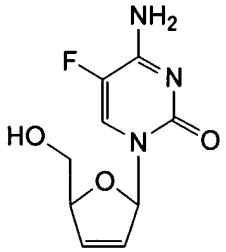
in step (2), the suitable reducing agent is selected from the group consisting of: Fe, Zn-Cu couple and Zn;

~~in step (2), the suitable acid catalyst, when present, is selected from the group consisting of: acetic acid, propanoic acid, butyric acid, benzoic acid, toluene sulfonic acid, HCl, HBr, HI, and $H_2SO_4$;~~

in step (2), the suitable polar solvent comprises one polar solvent or a combination of two or more polar solvents; and is selected from the group consisting of: methanol, ethanol, propanol, ethyl acetate, propyl acetate, butyl acetate, isopropyl acetate, acetonitrile, tetrahydrofuran, dimethoxy ethane, and 2-methoxyethyl ether; and

in step (3) the suitable base is selected from the group consisting of: sodium hydroxide, lithium hydroxide, potassium carbonate, sodium carbonate, sodium methoxide, sodium ethoxide, $C_3$-$C_6$ alkyl primary amine, ammonium hydroxide, and ammonium $C_1$-$C_6$ alkoxide.

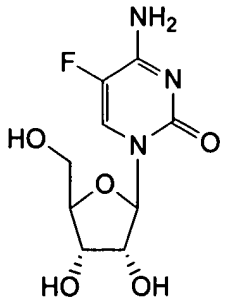
**15.** (Currently Amended) The process according to Claim 13, for the preparation of a compound of Formula (IV):




(IV)

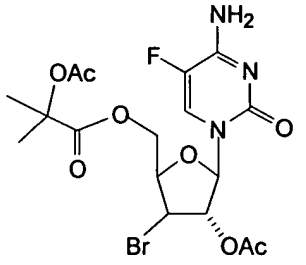
comprising:

(1) contacting a compound of Formula (I):

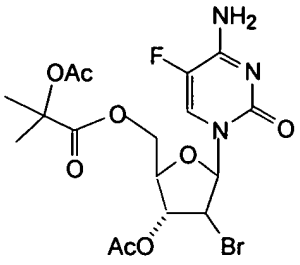


(I)

with 2-acetoxy-2-methyl-propionyl bromide in a suitable polar aprotic solvent to form a mixture of compounds of Formula (II-a) and (II*-a):

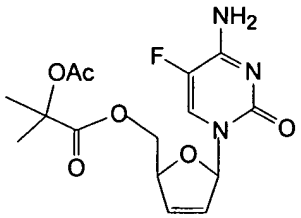



(II-a)




(II*-a)

(2) contacting the mixture of compounds of Formula (II-a) and (II*-a) with a suitable reducing agent in a suitable polar solvent, ~~optionally in the presence~~ in the absence of a ~~suitable~~ an acid catalyst, to form a compound of Formula (III-a):




(III-a); and

(3) contacting the compound of Formula (III-a) with a suitable base to form the compound of Formula (IV).

**16.** (Currently Amended) The process of Claim 15 for the preparation of a compound of Formula (IV), wherein:

in step (1), the suitable polar aprotic solvent comprises one polar aprotic solvent or a combination of two or more polar aprotic solvents; and is selected from the group consisting of: methylene chloride, tetrahydrofuran, t-butyl methyl ether, dimethoxy ethane, 2-methoxyethyl ether, dimethylformamide, dimethylacetamide, acetonitrile, ethyl acetate, and isopropyl acetate;

in step (2), the suitable reducing agent is selected from the group consisting of: Fe, Zn-Cu couple and Zn;

~~in step (2), the suitable acid catalyst, when present, is selected from the group consisting of: acetic acid, propanoic acid, butyric acid, benzoic acid, toluene sulfonic acid, HCl, HBr, HI, and $H_2SO_4$;~~

in step (2), the suitable polar solvent comprises one polar solvent or a combination of two or more polar solvents; and is selected from the group consisting of: methanol, ethanol, propanol, ethyl acetate, propyl acetate, butyl acetate, isopropyl acetate, acetonitrile, tetrahydrofuran, dimethoxy ethane, and 2-methoxyethyl ether; and

in step (3) the suitable base is selected from the group consisting of: sodium hydroxide, lithium hydroxide, potassium carbonate, sodium carbonate, sodium methoxide, sodium ethoxide, $C_3$-$C_6$ alkyl primary amine, ammonium hydroxide, and ammonium $C_1$-$C_6$ alkoxide.

**17.** (Currently Amended) The process of Claim 16 for the preparation of a compound of Formula (IV), wherein:

in step (1), the suitable polar aprotic solvent comprises a combination of acetonitrile and ethyl acetate;

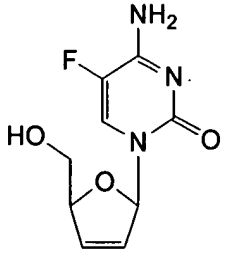
in step (2), the suitable reducing agent is Zn-Cu couple;

~~in step (2), the suitable acid catalyst, when present, is acetic acid;~~

in step (2), the suitable polar solvent comprises a combination of methanol and ethyl acetate; and

in step (3) the suitable base is sodium methoxide.

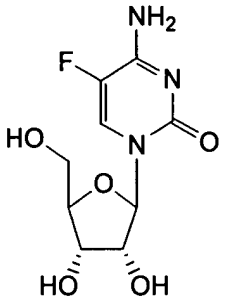
**18.** (Currently Amended) The process according to Claim 17, for the preparation of a compound of Formula (IV):




(IV)

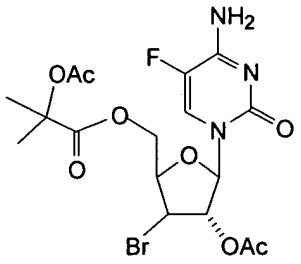
comprising:

(1) contacting a compound of Formula (I):

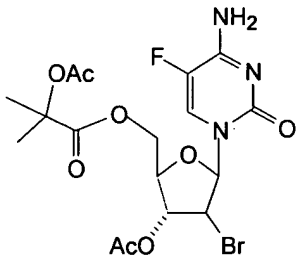


(I)

with 2-acetoxy-2-methyl-propionyl bromide in a suitable polar aprotic solvent comprising a combination of acetonitrile and ethyl acetate, wherein the ratio of acetonitrile to ethyl acetate is 1:4; to form a mixture of compounds of Formula (II-a) and (II*-a):

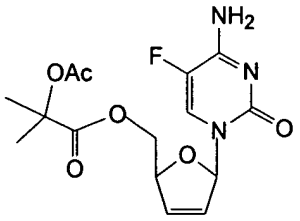


(II-a)



(II*-a)

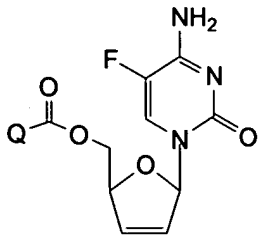
(2) contacting the mixture of compounds of Formula (II-a) and (II*-a) with Zn-Cu couple in a suitable polar solvent comprising a combination of methanol and ethyl acetate, wherein the ratio of methanol to ethyl acetate is in the range of 1:2 to 1:4~~; optionally in the presence of acetic acid~~, to form a compound of Formula (III-a):



(III-a); and

(3) contacting the compound of Formula (III-a) with sodium methoxide to form the compound of Formula (IV).

**19.** (Currently Amended) A process for the preparation of a compound of Formula (III):



(III)

wherein:

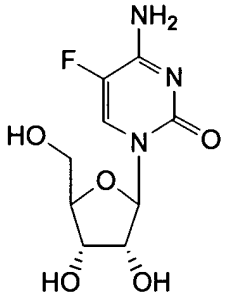
Q is 2-($R^1CH_2CO_2$)phenyl-, $R^1CH_2$-, or $R^1CH_2C(=O)OC(R^2)_2$–;

$R^1$ is H or $C_1$-$C_6$ alkyl;

$R^2$, at each occurrence, is independently selected from methyl, ethyl, and propyl;

comprising:

(1) contacting a compound of Formula (I):



(I)

with an acyl halide of Formula Q-C(=O)X, wherein:

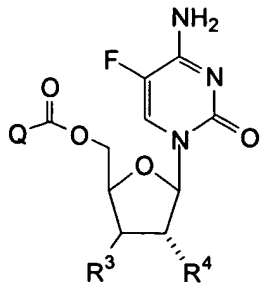
Q is 2-($R^1CH_2CO_2$)phenyl-, $R^1CH_2$-, or $R^1CH_2C(=O)OC(R^2)_2$–;

X is Cl, Br, or I;

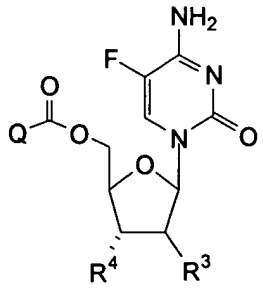
$R^1$ is H or $C_1$-$C_6$ alkyl;

$R^2$, at each occurrence, is independently selected from methyl, ethyl, and propyl;

in a suitable polar aprotic solvent to form a compound of Formula (II), a compound of Formula (II*), or a mixture of compounds of Formula (II) and (II*):



,



(II) (II*)

wherein $R^3$ is X; and $R^4$ is $R^1CH_2C(=O)O$-; and

(2) contacting the compound of Formula (II), the compound of Formula (II*), or the mixture of compounds of Formula (II) and (II*); with a suitable reducing agent in a suitable polar solvent, ~~optionally in the presence~~ in the absence of ~~a suitable~~ an acid catalyst, to form a compound of Formula (III).

**20.** (Currently Amended) The process of Claim 19 for the preparation of a compound of Formula (III), wherein:

in step (1) the acyl halide of Formula Q-C(=O)X comprises:

2-acetoxy-2-methyl-propionyl bromide, 2-(acetoxy)-2-methyl-butanoyl bromide, 2-(acetoxy)-2-ethyl-butanoyl bromide, or 2-(acetoxy)-2-methyl-pentanoyl bromide;

in step (1), the suitable polar aprotic solvent comprises one polar aprotic solvent or a combination of two or more polar aprotic solvents; and is selected from the group consisting of: methylene chloride, tetrahydrofuran, t-butyl methyl ether, dimethoxy ethane, 2-methoxyethyl ether, dimethylformamide, dimethylacetamide, acetonitrile, ethyl acetate, and isopropyl acetate;

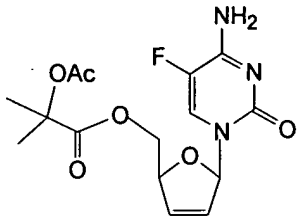
in step (2), the suitable reducing agent is selected from the group consisting of: Fe, Zn-Cu couple and Zn;

~~in step (2), the suitable acid catalyst, when present, is selected from the group consisting of: acetic acid, propanoic acid, butyric acid, benzoic acid, toluene sulfonic acid, HCl, HBr, HI, and $H_2SO_4$;~~ and

in step (2), the suitable polar solvent comprises one polar solvent or a combination of two or more polar solvents; and is selected from the group consisting of: methanol, ethanol, propanol, ethyl acetate, propyl acetate, butyl acetate, isopropyl acetate, acetonitrile, tetrahydrofuran, dimethoxy ethane, and 2-methoxyethyl ether.

**21.** (Currently Amended) The process according to Claim 19, for the preparation of a

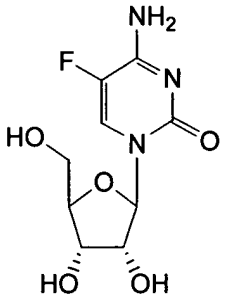
compound of Formula (III-a):



(III-a)

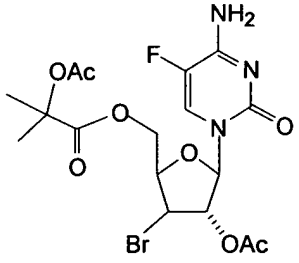
comprising:

(1) contacting a compound of Formula (I):

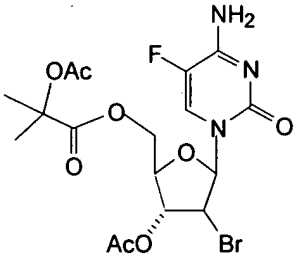


(I)

with 2-acetoxy-2-methyl-propionyl bromide in a suitable polar aprotic solvent to form a compound of Formula (II-a), a compound of Formula (II*-a), or a mixture of compounds of Formula (II-a) and (II*-a):



(II-a)



(II*-a)

(2) contacting the compound of Formula (II-a), the compound of Formula (II*-a), or the mixture of compounds of Formula (II-a) and (II*-a); with a suitable reducing agent in a suitable polar solvent, ~~optionally in the presence~~ in the absence of ~~a suitable~~ an acid catalyst, to form a compound of Formula (III-a).

**22.** (Currently Amended) The process of Claim 21 for the preparation of a compound of Formula (III-a), wherein:

in step (1), the suitable polar aprotic solvent comprises one polar aprotic solvent or a combination of two or more polar aprotic solvents; and is selected from the group consisting of: methylene chloride, tetrahydrofuran, t-butyl methyl ether, dimethoxy ethane, 2-methoxyethyl ether, dimethylformamide, dimethylacetamide, acetonitrile, ethyl acetate, and isopropyl acetate;

in step (2), the suitable reducing agent is selected from the group consisting of: Fe, Zn-Cu couple and Zn;

~~in step (2), the suitable acid catalyst, when present, is selected from the group consisting of: acetic acid, propanoic acid, butyric acid, benzoic acid, toluene sulfonic acid, HCl, HBr, HI, and $H_2SO_4$;~~ and

in step (2), the suitable polar solvent comprises one polar solvent or a combination of two or more polar solvents; and is selected from the group consisting of: methanol, ethanol, propanol, ethyl acetate, propyl acetate, butyl acetate, isopropyl acetate, acetonitrile, tetrahydrofuran, dimethoxy ethane, and 2-methoxyethyl ether.

**23.** (Currently Amended) The process of Claim 22 for the preparation of a compound of Formula (III-a), wherein:

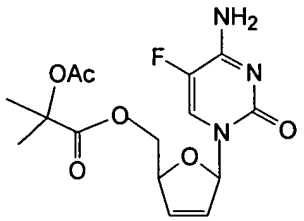
in step (1), the suitable polar aprotic solvent comprises a combination of acetonitrile and ethyl acetate;

in step (2), the suitable reducing agent is Zn-Cu couple;

~~in step (2), the suitable acid catalyst, when present, is acetic acid;~~ and

in step (2), the suitable polar solvent comprises a combination of methanol and ethyl acetate.

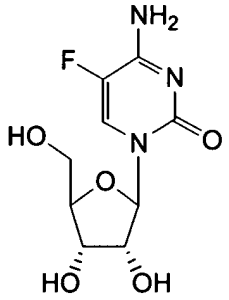
**24.** (Currently Amended) The process according to Claim 23, for the preparation of a compound of Formula (III-a):



(III-a)

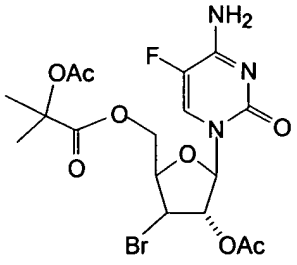
comprising:

(1) contacting a compound of Formula (I):

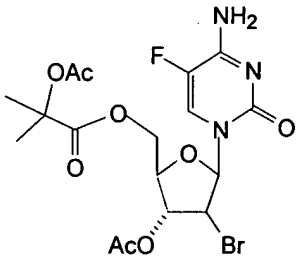


(I)

with 2-acetoxy-2-methyl-propionyl bromide in a suitable polar aprotic solvent comprising a combination of acetonitrile and ethyl acetate, wherein the ratio of acetonitrile to ethyl acetate is 1:4; to form a compound of Formula (II-a), a compound of Formula (II*-a), or a mixture of compounds of Formula (II-a) and (II*-a):



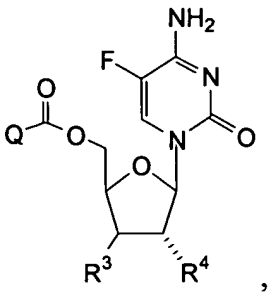
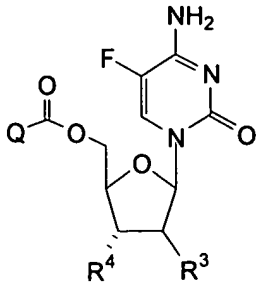
(II-a)



(II*-a)

(2) contacting the compound of Formula (II-a), the compound of Formula (II*-a), or the mixture of compounds of Formula (II-a) and (II*-a); with Zn-Cu couple in a suitable polar solvent comprising a combination of methanol and ethyl acetate, wherein the ratio of methanol to ethyl acetate is in the range of 1:2 to 1:4~~; optionally in the presence of acetic acid~~, to form a compound of Formula (III-a).

**25.** (Currently Amended) A compound of Formula (II) or (II*):

(II) (II*)

or a pharmaceutically acceptable salt thereof, wherein:

in Formula II, Q is $R^1CH_2$- or $R^1CH_2C(=O)OC(R^2)_2$–;

$R^1$ is H or $C_1$-$C_6$ alkyl, provided that when Q is $R^1CH_2$-, $R^1$ is not H;

$R^2$ is independently selected from methyl, ethyl, and propyl;

$R^3$ is Cl, Br, or I; and

$R^4$ is $R^1CH_2C(=O)O$–; and wherein:

in Formula II*,

Q is $R^1CH_2C(=O)OC(R^2)_2$–;

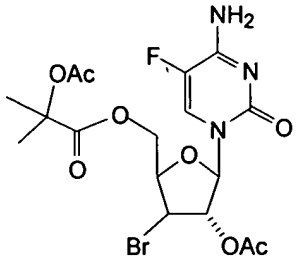
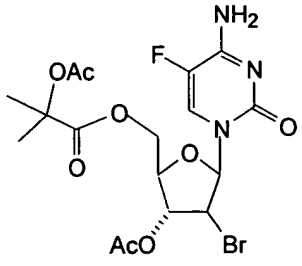
$R^1$ is H or $C_1$-$C_6$ alkyl;

$R^2$ is independently selected from methyl, ethyl, and propyl;

$R^3$ is Cl, Br, or I; and

$R^4$ is $R^1CH_2C(=O)O$–;.

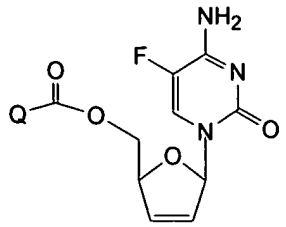
**26.** (Currently Amended) A compound of ~~Claim 25 of~~ Formula (II-a) or (II*-a):

(II-a) (II*-a)

or a pharmaceutically acceptable salt thereof.

**27.** (Currently Amended) A compound of Formula (III):



(III)

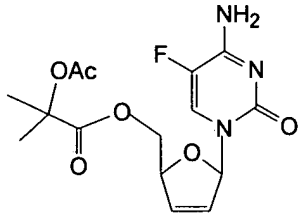
or a pharmaceutically acceptable salt thereof, wherein:

Q is ~~$R^1CH_2$–or~~ $R^1CH_2C(=O)OC(R^2)_2$–;

$R^1$ is H or $C_1$-$C_6$ alkyl; and

$R^2$ is independently selected from methyl, ethyl, and propyl.

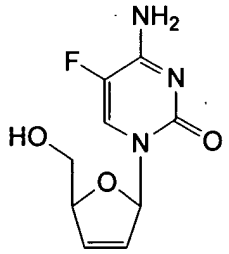
**28.** (Currently Amended) A compound of ~~Claim 27 of~~ Formula (III-a):



(III-a)

or a pharmaceutically acceptable salt thereof.

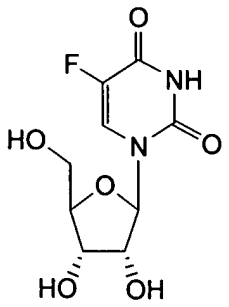
**29.** (Currently Amended) A process for the preparation of a compound of Formula (IV):



(IV)

comprising:

(1) contacting a compound of Formula (IV):



(V)

with an acyl halide of Formula Q-C(=O)X, wherein:

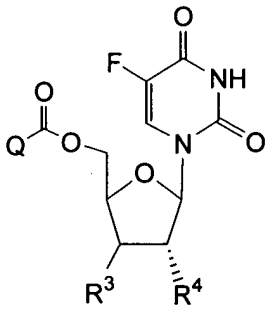
Q is 2-($R^1CH_2CO_2$)phenyl-, $R^1CH_2$-, or $R^1CH_2C(=O)OC(R^2)_2$–;

X is Cl, Br, ~~or IV~~ or I;

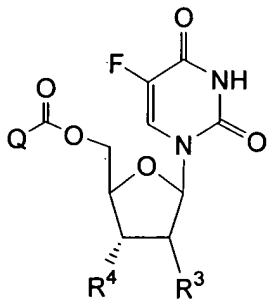
$R^1$ is H or $C_1$-$C_6$ alkyl;

$R^2$, at each occurrence, is independently selected from methyl, ethyl, and propyl;

in a suitable polar aprotic solvent to form a compound of Formula (VI), a compound of Formula (VI*), or a mixture of compounds of Formula (VI) and (VI*):



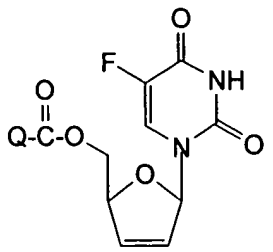
(VI)



(VI*)

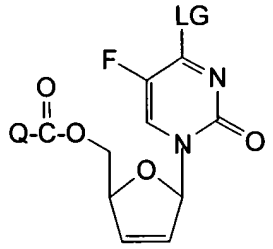
wherein $R^3$ is X; and $R^4$ is $R^1CH_2C(=O)O$-;

(2) contacting the compound of Formula (VI), the compound of Formula (VI*), or the mixture of compounds of Formula (VI) and (VI*); with a reducing agent in a suitable polar solvent, ~~optionally in the presence~~ in the absence of ~~a suitable~~ an acid catalyst, to form a compound of Formula (VII):



(VII);

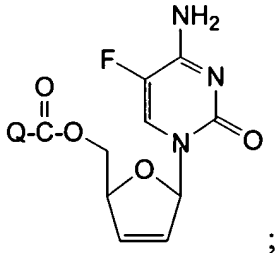
(3a) contacting the compound of Formula (VII) with an activating agent in the presence of an amine base, to form a compound of Formula (VIII):



(VIII)

wherein LG is a leaving group derived from the activating agent;

(3b) contacting the compound of Formula (VIII) with an aminating agent to form a compound of Formula (III),



; and

(III)

(4) contacting the compound of Formula (III) with a suitable base to form the compound of Formula (IV).

**30.** (Currently Amended) The process of Claim 29 for the preparation of a compound of Formula (IV), wherein:

in step (1) the acyl halide of Formula Q-C(=O)X comprises:

2-acetoxy-2-methyl-propionyl bromide,

2-(acetoxy)-2-methyl-butanoyl bromide,

2-(acetoxy)-2-ethyl-butanoyl bromide, or

2-(acetoxy)-2-methyl-pentanoyl bromide;

in step (1), the suitable polar aprotic solvent comprises one polar aprotic solvent or a combination of two or more polar aprotic solvents, and is selected from the group consisting of: methylene chloride, tetrahydrofuran, t-butyl methyl ether, dimethoxy ethane, 2-methoxyethyl ether, dimethylformamide, dimethylacetamide, acetonitrile, ethyl acetate, and isopropyl acetate;

in step (2), the reducing agent is selected from the group consisting of: Fe, Zn-Cu couple and Zn;

~~in step (2), the acid catalyst, when present, is selected from the group consisting of: acetic acid, propanoic acid, butyric acid, benzoic acid, toluene sulfonic acid, HCl, HBr, HI, and $H_2SO_4$;~~

in step (2), the suitable polar solvent comprises one polar solvent or a combination of two or more polar solvents; and is selected from the group consisting of: methanol, ethanol, propanol, ethyl acetate, propyl acetate, butyl acetate, isopropyl acetate, acetonitrile, tetrahydrofuran, dimethoxy ethane, and 2-methoxyethyl ether;

in step (3a) the activating agent is selected from the group consisting of: methanesulfonyl chloride, trifluoromethyl sulfonyl chloride, ethanesulfonyl chloride, benzenesulfonyl chloride, p-toluene-sulfonyl chloride, triazole/phosphorus oxychloride and triazole/diphenyl chloro-phosphate;

in step (3a) the amine base is selected from the group consisting of: triethylamine, tributylamine, N-methylmorpholine, N,N-diisopropyl-ethylamine, N,N-dimethylcyclohexylamine, N,N-diethylcyclohexylamine, N,N-dimethyloctylamine, tetramethylethylenediamine, pyridine, N,N-dimethyl-aminopyridine,

1,4-diazabicyclo[2.2.2]octane,

1,8-diazabicyclo[5.4.0]undec-7-ene, and

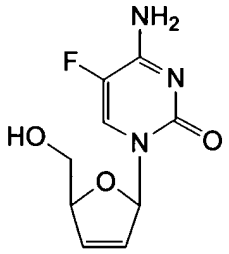
1,5-diazabicyclo[4.3.0]non-5-ene;

in step (3a) the leaving group LG is selected from the group consisting of methanesulfonyloxy, trifluoromethyl-sulfonyloxy, ethanesulfonyloxy, benzenesulfonyloxy, toluenesulfonyloxy, and triazolyl;

in step (3b) the aminating agent is selected from the group consisting of: $NH_3$, ammonium hydroxide, and ammonium carbonate; and

in step (4) the suitable base is selected from the group consisting of: sodium hydroxide, lithium hydroxide, potassium carbonate, sodium carbonate, sodium methoxide, sodium ethoxide, $C_3$-$C_6$ alkyl primary amine, ammonium hydroxide, and ammonium $C_1$-$C_6$ alkoxide.

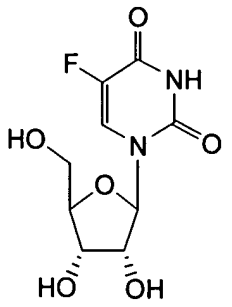
**31.** (Currently Amended) The process according to Claim 29, for the preparation of a compound of Formula (IV):




(IV)

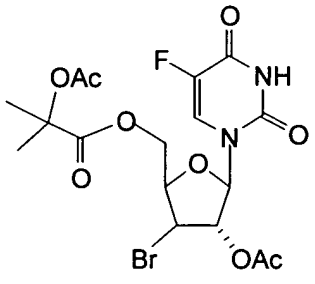
comprising:

(1) contacting a compound of Formula (V):

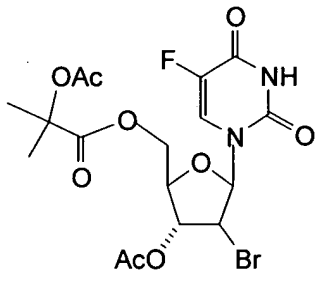


(V)

with 2-acetoxy-2-methyl-propionyl bromide in a suitable polar aprotic solvent to form a compound of Formula (VI-a), a compound of Formula (VI*-a), or a mixture of compounds of Formula (VI-a) and (VI*-a):

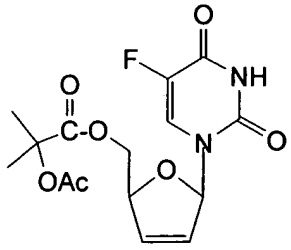


(VI-a)



(VI*-a)

(2) contacting the compound of Formula (VI-a), the compound of Formula (VI*-a), or the mixture of compounds of Formula (VI-a) and (VI*-a); with a reducing agent in a suitable polar solvent, ~~optionally in the presence~~ in the absence of ~~a suitable~~ an acid catalyst, to form a compound of Formula (VII-a):



(VII-a);

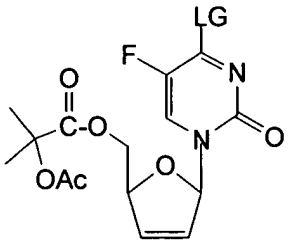
(3a) contacting the compound of Formula (VII-a) with an activating agent selected from the group consisting of:

i) an aryl sulfonyl halide,

ii) an alkyl sulfonyl halide, and

iii) 1,2,4-triazole in the presence of a phosphorus chloride;

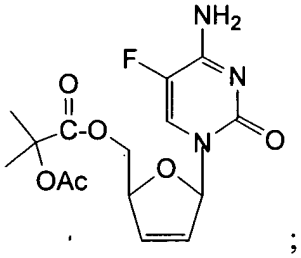
in the presence of an amine base, to form a compound of Formula (VIII-a);




(VIII-a)

wherein LG is a leaving group derived from the activating agent;

(3b) contacting the compound of Formula (VIII-a) with an aminating agent to form a compound of Formula (III-a),




;

(III-a)

and

(4) contacting the compound of Formula (III-a) with a suitable base to form the compound of Formula (IV).

**32.** (Currently Amended) The process of Claim 31 for the preparation of a compound of Formula (IV), wherein:

in step (1), the suitable polar aprotic solvent comprises one polar aprotic solvent or a combination of two or more polar aprotic solvents; and is selected from the group consisting of: methylene chloride, tetrahydrofuran, t-butyl methyl ether, dimethoxy ethane, 2-methoxyethyl ether, dimethylformamide, dimethylacetamide, acetonitrile, ethyl acetate, and isopropyl acetate;

in step (2), the reducing agent is selected from the group consisting of: Fe, Zn-Cu couple and Zn;

~~in step (2), the acid catalyst, when present, is selected from the group consisting of: acetic acid, propanoic acid, butyric acid, benzoic acid, toluene sulfonic acid, HCl, HBr, HI, and $H_2SO_4$;~~

in step (2), the suitable polar solvent comprises one polar solvent or a combination of two or more polar solvents; and is selected from the group consisting of: methanol, ethanol, propanol, ethyl acetate, propyl acetate, butyl acetate, isopropyl acetate, acetonitrile, tetrahydrofuran, dimethoxy ethane, and 2-methoxyethyl ether;

in step (3a) the activating agent is selected from the group consisting of: methanesulfonyl chloride, trifluoromethyl sulfonyl chloride, ethanesulfonyl chloride, benzenesulfonyl chloride, p-toluene-sulfonyl chloride, triazole/phosphorus oxychloride and triazole/diphenyl chloro-phosphate;

in step (3a) the amine base is selected from the group consisting of: triethylamine, tributylamine, N-methylmorpholine, N,N-diisopropyl-ethylamine, tetramethylethylenediamine, pyridine, N,N-dimethyl-aminopyridine, 1,4-diazabicyclo[2.2.2]octane, and 1,8-diazabicyclo[5.4.0]undec-7-ene;

in step (3a) the leaving group LG is selected from the group consisting of methanesulfonyloxy, trifluoromethyl-sulfonyloxy, ethanesulfonyloxy, benzenesulfonyloxy, toluenesulfonyloxy, and triazolyl;

in step (3b) the aminating agent is selected from the group: $NH_3$, ammonium hydroxide, and ammonium carbonate; and

in step (4) the suitable base is selected from the group consisting of: sodium hydroxide, lithium hydroxide, potassium carbonate, sodium carbonate, sodium methoxide, sodium ethoxide, $C_3$-$C_6$ alkyl primary amine, ammonium hydroxide, and

ammonium $C_1$-$C_6$ alkoxide.

**33.** (Currently Amended) The process of Claim 32 for the preparation of a compound of Formula (IV), wherein:

in step (1), the suitable polar aprotic solvent comprises one solvent which is acetonitrile;

in step (2), the reducing agent is Zn-Cu couple;

~~in step (2), the acid catalyst, when present, is acetic acid;~~

in step (2), the suitable polar solvent comprises a combination of methanol and ethyl acetate;

in step (3a) the activating agent is triazole/phosphorus oxychloride;

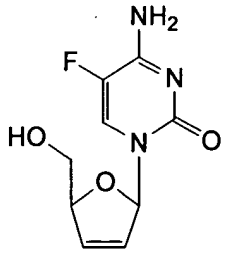
in step (3a) the amine base is triethylamine;

in step (3a) the leaving group LG is triazolyl;

in step (3b), the aminating agent is $NH_3$; and

in step (4) the suitable base is sodium methoxide.

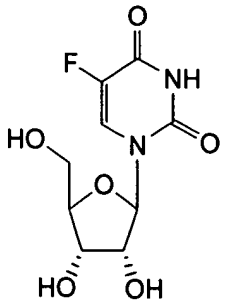
**34.** (Currently Amended) The process according to Claim 33, for the preparation of a compound of Formula (IV):




(IV)

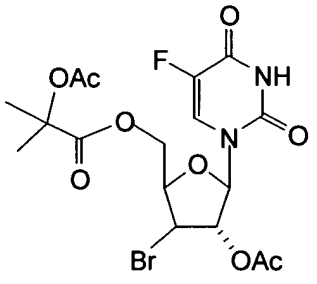
comprising:

(1) contacting a compound of Formula (V):

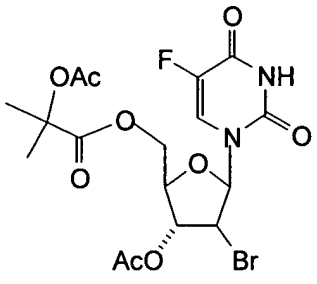


(V)

with 2-acetoxy-2-methyl-propionyl bromide in acetonitrile to form a compound of Formula (VI-a), a compound of Formula (VI*-a), or a mixture of compounds of Formula (VI-a) and (VI*-a):

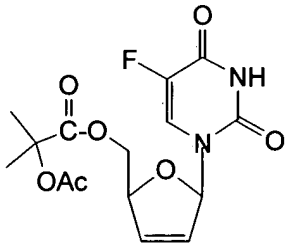



(VI-a)



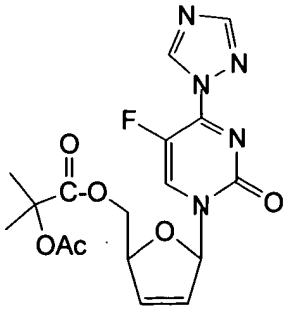

(VI*-a)

(2) contacting the compound of Formula (VI-a), the compound of Formula (VI*-a), or the mixture of compounds of Formula (VI-a) and (VI*-a); with Zn-Cu couple in a suitable polar solvent comprising a combination of methanol and ethyl acetate, wherein the ratio of methanol to ethyl acetate is in the range of 1:2 to 1:4~~; optionally in the presence of acetic acid~~, to form a compound of Formula (VII-a):




(VII-a);

(3a) contacting the compound of Formula (VII-a) with 1,2,4-triazole/phosphorus oxychloride, in the presence of triethylamine, to form a compound of Formula (VIII-a):



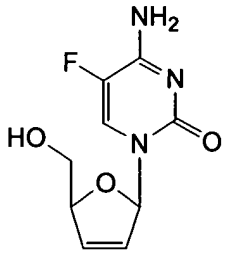

(VIII-a);

(3b) contacting the compound of Formula (VIII-a) with $NH_3$, to form a compound of

Formula (III-a), and

(4) contacting the compound of Formula (III-a) with sodium methoxide to form the compound of Formula (IV).

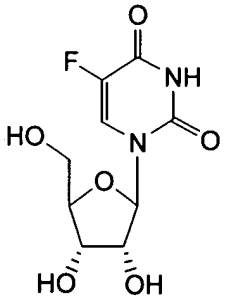
**35.** (Currently Amended) The process of Claim 29 for the preparation of a compound of Formula (IV):



(IV)

comprising:

(1) contacting a compound of Formula (V):



(V)

with an acyl halide of Formula Q-C(=O)X, wherein:

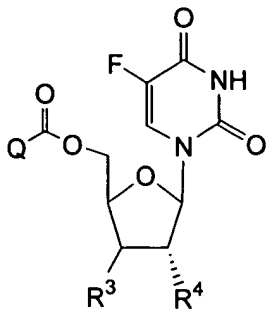
Q is 2-($R^1CH_2CO_2$)phenyl-, $R^1CH_2$-, or $R^1CH_2C(=O)OC(R^2)_2$–;

X is Cl, Br, ~~or IV~~ or I;

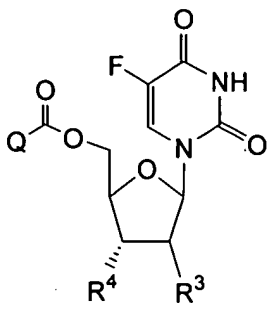
$R^1$ is H or $C_1$-$C_6$ alkyl;

$R^2$, at each occurrence, is independently selected from methyl, ethyl, and propyl;

in a suitable polar aprotic solvent to form a mixture of compounds of Formula (VI) and (VI*):



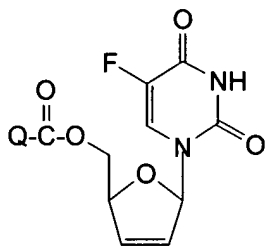
(VI)



(VI*)

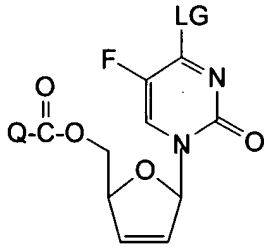
wherein $R^3$ is X; and $R^4$ is $R^1CH_2C(=O)O$-;

(2) contacting the mixture of compounds of Formula (VI) and (VI*); with a reducing agent in a suitable polar solvent, ~~optionally in the presence~~ in the absence of ~~a suitable~~ an acid catalyst, to form a compound of Formula (VII):



(VII);

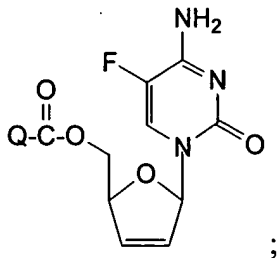
(3a) contacting the compound of Formula (VII) with an activating agent in the presence of an amine base, to form a compound of Formula (VIII):



(VIII)

wherein LG is a leaving group derived from the activating agent;

(3b) contacting the compound of Formula (VIII) with an aminating agent to form a compound of Formula (III),




; and

(III)

(4) contacting the compound of Formula (III) with a suitable base to form the compound of Formula (IV).

**36.** (Currently Amended) The process of Claim 35 for the preparation of a compound of Formula (IV), wherein:

in step (1) the acyl halide of Formula Q-C(=O)X comprises:

2-acetoxy-2-methyl-propionyl bromide,

2-(acetoxy)-2-methyl-butanoyl bromide,

2-(acetoxy)-2-ethyl-butanoyl bromide, or

2-(acetoxy)-2-methyl-pentanoyl bromide;

in step (1), the suitable polar aprotic solvent comprises one polar aprotic solvent or a combination of two or more polar aprotic solvents, and is selected from the group consisting of: methylene chloride, tetrahydrofuran, t-butyl methyl ether, dimethoxy ethane, 2-methoxyethyl ether, dimethylformamide, dimethylacetamide, acetonitrile, ethyl acetate, and isopropyl acetate;

in step (2), the reducing agent is selected from the group consisting of: Fe, Zn-Cu couple and Zn;

~~in step (2), the acid catalyst, when present, is selected from the group consisting of: acetic acid, propanoic acid, butyric acid, benzoic acid, toluene sulfonic acid, HCl, HBr, HI, and $H_2SO_4$;~~

in step (2), the suitable polar solvent comprises one polar solvent or a combination of two or more polar solvents; and is selected from the group consisting of: methanol, ethanol, propanol, ethyl acetate, propyl acetate, butyl acetate, isopropyl acetate, acetonitrile, tetrahydrofuran, dimethoxy ethane, and 2-methoxyethyl ether;

in step (3a) the activating agent is selected from the group consisting of:

methanesulfonyl chloride, trifluoromethyl sulfonyl chloride, ethanesulfonyl chloride, benzenesulfonyl chloride,
p-toluene-sulfonyl chloride, triazole/phosphorus oxychloride and
triazole/diphenyl chloro-phosphate;

in step (3a) the amine base is selected from the group consisting of: triethylamine,

tributylamine,

N-methylmorpholine, N,N-diisopropyl-ethylamine,

N,N-dimethylcyclohexylamine,

N,N-diethylcyclohexylamine,

N,N-dimethyloctylamine, tetramethylethylenediamine,

pyridine, N,N-dimethyl-aminopyridine,

1,4-diazabicyclo[2.2.2]octane,

1,8-diazabicyclo[5.4.0]undec-7-ene, and

1,5-diazabicyclo[4.3.0]non-5-ene;

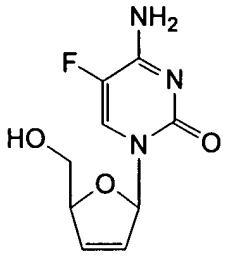
in step (3a) the leaving group LG is selected from the group consisting of methanesulfonyloxy, trifluoromethyl-sulfonyloxy, ethanesulfonyloxy, benzenesulfonyloxy, toluenesulfonyloxy, and triazolyl;

in step (3b) the aminating agent is selected from the group consisting of: $NH_3$, ammonium hydroxide, and ammonium carbonate; and

in step (4) the suitable base is selected from the group consisting of: sodium hydroxide, lithium hydroxide, potassium carbonate, sodium carbonate, sodium methoxide, sodium ethoxide, $C_3$-$C_6$ alkyl primary amine, ammonium hydroxide, and ammonium $C_1$-$C_6$ alkoxide.

**37.** (Currently Amended) The process according to Claim 35, for the preparation of a

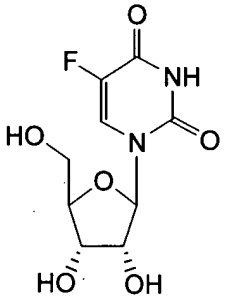
compound of Formula (IV):



(IV)

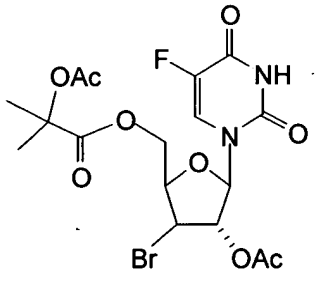
comprising:

(1) contacting a compound of Formula (V):

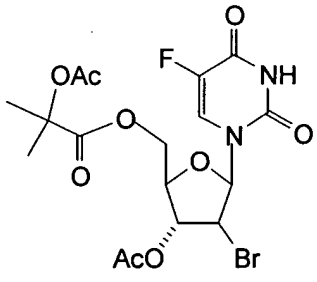


(V)

with 2-acetoxy-2-methyl-propionyl bromide in a suitable polar aprotic solvent to form a mixture of compounds of Formula (VI-a) and (VI*-a):

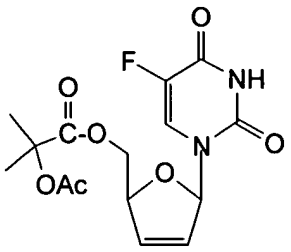


(VI-a)



(VI*-a)

(2) contacting the mixture of compounds of Formula (VI-a) and (VI*-a); with a reducing agent in a suitable polar solvent, ~~optionally in the presence~~ in the absence of ~~a suitable~~ an acid catalyst, to form a compound of Formula (VII-a):



(VII-a);

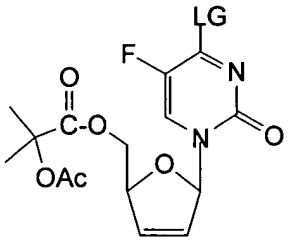
(3a) contacting the compound of Formula (VII-a) with a activating agent selected from the group consisting of:

i) an aryl sulfonyl halide,

ii) an alkyl sulfonyl halide, and

iii) 1,2,4-triazole in the presence of a phosphorus chloride;

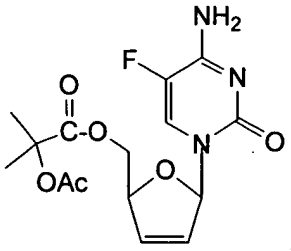
in the presence of an amine base, to form a compound of Formula (VIII-a);



(VIII-a)

wherein LG is a leaving group derived from the activating agent;

(3b) contacting the compound of Formula (VIII-a) with an aminating agent to form a compound of Formula (III-a),



;

(III-a)

and

(4) contacting the compound of Formula (III-a) with a suitable base to form the compound of Formula (IV).

**38.** (Currently Amended) The process of Claim 37 for the preparation of a compound of Formula (IV), wherein:

in step (1), the suitable polar aprotic solvent comprises one polar aprotic solvent or a combination of two or more polar aprotic solvents; and is selected from the group consisting of: methylene chloride, tetrahydrofuran, t-butyl methyl ether, dimethoxy ethane, 2-methoxyethyl ether, dimethylformamide, dimethylacetamide, acetonitrile, ethyl acetate, and isopropyl acetate;

in step (2), the reducing agent is selected from the group consisting of: Fe, Zn-Cu couple and Zn;

~~in step (2), the acid catalyst, when present, is selected from the group consisting of: acetic acid, propanoic acid, butyric acid, benzoic acid, toluene sulfonic acid, HCl, HBr, HI, and $H_2SO_4$;~~

in step (2), the suitable polar solvent comprises one polar solvent or a combination of two or more polar solvents; and is selected from the group consisting of: methanol, ethanol, propanol, ethyl acetate, propyl acetate, butyl acetate, isopropyl acetate, acetonitrile, tetrahydrofuran, dimethoxy ethane, and 2-methoxyethyl ether;

in step (3a) the activating agent is selected from the group consisting of: methanesulfonyl chloride, trifluoromethyl sulfonyl chloride, ethanesulfonyl chloride, benzenesulfonyl chloride, p-toluene-sulfonyl chloride, triazole/phosphorus oxychloride and triazole/diphenyl chloro-phosphate;

in step (3a) the amine base is selected from the group consisting of: triethylamine, tributylamine, N-methylmorpholine, N,N-diisopropyl-ethylamine, tetramethylethylenediamine, pyridine, N,N-dimethyl-aminopyridine, 1,4-diazabicyclo[2.2.2]octane, and 1,8-diazabicyclo[5.4.0]undec-7-ene;

in step (3a) the leaving group LG is selected from the group consisting of methanesulfonyloxy, trifluoromethyl-sulfonyloxy, ethanesulfonyloxy, benzenesulfonyloxy, toluenesulfonyloxy, and triazolyl;

in step (3b) the aminating agent is selected from the group: $NH_3$, ammonium hydroxide, and ammonium carbonate; and

in step (4) the suitable base is selected from the group consisting of: sodium hydroxide, lithium hydroxide, potassium carbonate, sodium carbonate, sodium methoxide, sodium ethoxide, $C_3$-$C_6$ alkyl primary amine, ammonium hydroxide, and ammonium $C_1$-$C_6$ alkoxide.

**39.** (Currently Amended) The process of Claim 38 for the preparation of a compound of Formula (IV), wherein:

in step (1), the suitable polar aprotic solvent comprises one solvent which is acetonitrile;

in step (2), the reducing agent is Zn-Cu couple;

~~in step (2), the acid catalyst, when present, is acetic acid;~~

in step (2), the suitable polar solvent comprises a combination of methanol and ethyl acetate;

in step (3a) the activating agent is triazole/phosphorus oxychloride;

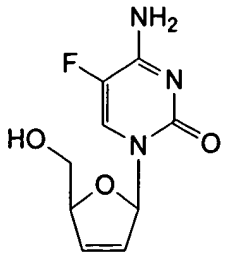
in step (3a) the amine base is triethylamine;

in step (3a) the leaving group LG is triazolyl;

in step (3b), the aminating agent is $NH_3$; and

in step (4) the suitable base is sodium methoxide.

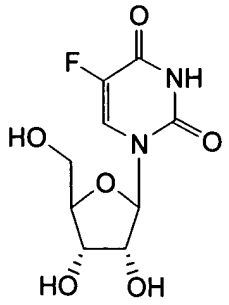
**40.** (Currently Amended) The process according to Claim 39, for the preparation of a compound of Formula (IV):



(IV)

comprising:

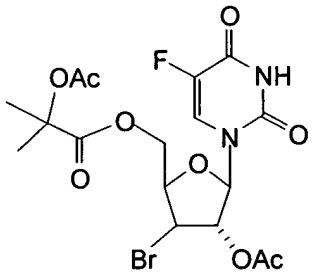
(1) contacting a compound of Formula (V):



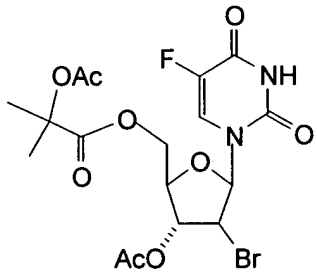
(V)

with 2-acetoxy-2-methyl-propionyl bromide in acetonitrile to form a mixture of compounds of Formula (VI-a) and

(VI*-a):

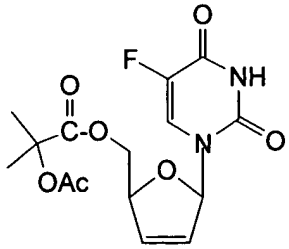


(VI-a)



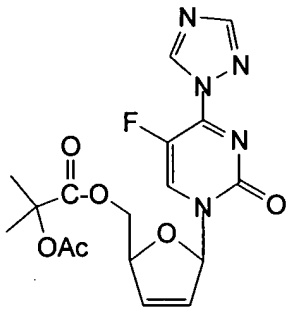
(VI*-a)

(2) contacting the mixture of compounds of Formula (VI-a) and (VI*-a); with Zn-Cu couple in a suitable polar solvent comprising a combination of methanol and ethyl acetate, wherein the ratio of methanol to ethyl acetate is in the range of 1:2 to 1:4~~; optionally in the presence of acetic acid,~~ to form a compound of Formula (VII-a):



(VII-a);

(3a) contacting the compound of Formula (VII-a) with 1,2,4-triazole/phosphorus oxychloride, in the presence of triethylamine, to form a compound of Formula (VIII-a):

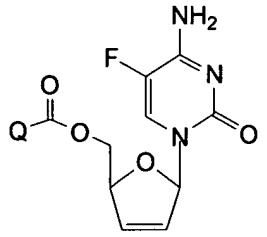


(VIII-a);

(3b) contacting the compound of Formula (VIII-a) with $NH_3$, to form a compound of Formula (III-a), and

(4) contacting the compound of Formula (III-a) with sodium methoxide to form the compound of Formula (IV).

**41.** (Currently Amended) A process for the preparation of a compound of Formula (III):



(III)

wherein:

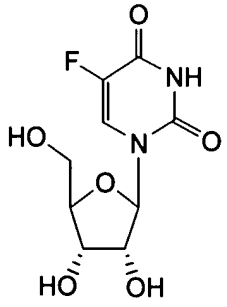
Q is 2-($R^1CH_2CO_2$)phenyl-, $R^1CH_2$-, or $R^1CH_2C(=O)OC(R^2)_2$–;

$R^1$ is H or $C_1$-$C_6$ alkyl;

$R^2$, at each occurrence, is independently selected from methyl, ethyl, and propyl;

comprising:

(1) contacting a compound of Formula (V):



(V)

with an acyl halide of Formula Q-C(=O)X, wherein:

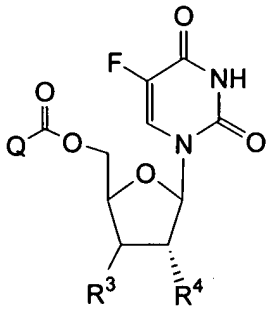
Q is 2-($R^1CH_2CO_2$)phenyl-, $R^1CH_2$-, or $R^1CH_2C(=O)OC(R^2)_2$–;

X is Cl, Br, ~~or IV~~ or I;

$R^1$ is H or $C_1$-$C_6$ alkyl;

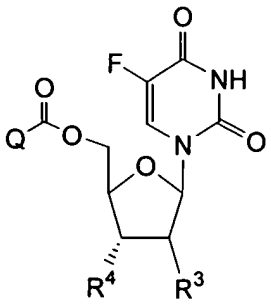
$R^2$, at each occurrence, is independently selected from methyl, ethyl, and propyl;

in a suitable polar aprotic solvent to form a compound of Formula (VI), a compound of Formula (VI*), or a mixture of compounds of Formula (VI) and (VI*):



(VI)

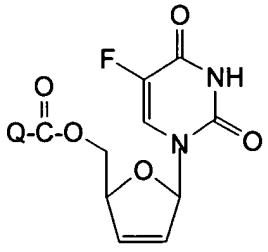
,



(VI*)

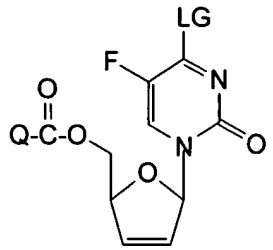
wherein $R^3$ is X; and $R^4$ is $R^1CH_2C(=O)O$-;

(2) contacting the compound of Formula (VI), the compound of Formula (VI*), or the mixture of compounds of Formula (VI) and (VI*); with a reducing agent in a suitable polar solvent, ~~optionally in the presence~~ in the absence of ~~a suitable~~ an acid catalyst, to form a compound of Formula (VII):



(VII);

(3a) contacting the compound of Formula (VII) with an activating agent in the presence of an amine base, to form a compound of Formula (VIII):




(VIII)

wherein LG is a leaving group derived from the activating agent;

(3b) contacting the compound of Formula (VIII) with an aminating agent to form a compound of Formula (III).

**42.** (Currently Amended) The process of Claim 41 for the preparation of a compound of Formula (III), wherein:

in step (1) the acyl halide of Formula Q-C(=O)X comprises:

2-acetoxy-2-methyl-propionyl bromide,

2-(acetoxy)-2-methyl-butanoyl bromide,

2-(acetoxy)-2-ethyl-butanoyl bromide, or

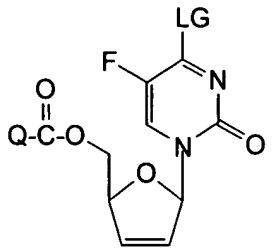
2-(acetoxy)-2-methyl-pentanoyl bromide;

in step (1), the suitable polar aprotic solvent comprises one polar aprotic solvent or a combination of two or more polar aprotic solvents; and is selected from the group consisting of: methylene chloride, tetrahydrofuran, t-butyl methyl ether, dimethoxy ethane, 2-methoxyethyl ether, dimethylformamide, dimethylacetamide, acetonitrile, ethyl acetate, and isopropyl acetate;

in step (2), the reducing agent is selected from the group consisting of: Fe, Zn-Cu couple and Zn;

~~in step (2), the acid catalyst, when present, is selected from the group consisting of: acetic acid, propanoic acid, butyric acid, benzoic acid, toluene sulfonic acid, HCl, HBr, HI, and $H_2SO_4$;~~

in step (2), the suitable polar solvent comprises one polar solvent or a combination of two or more polar solvents; and is selected from the group consisting of: methanol, ethanol, propanol, ethyl acetate, propyl acetate, butyl acetate, isopropyl acetate, acetonitrile, tetrahydrofuran, dimethoxy ethane, and 2-methoxyethyl ether;




(VIII)

wherein LG is a leaving group derived from the activating agent;

(3b) contacting the compound of Formula (VIII) with an aminating agent to form a compound of Formula (III).

**42.** (Currently Amended) The process of Claim 41 for the preparation of a compound of Formula (III), wherein:

in step (1) the acyl halide of Formula Q-C(=O)X comprises:

2-acetoxy-2-methyl-propionyl bromide,

2-(acetoxy)-2-methyl-butanoyl bromide,

2-(acetoxy)-2-ethyl-butanoyl bromide, or

2-(acetoxy)-2-methyl-pentanoyl bromide;

in step (1), the suitable polar aprotic solvent comprises one polar aprotic solvent or a combination of two or more polar aprotic solvents; and is selected from the group consisting of: methylene chloride, tetrahydrofuran, t-butyl methyl ether, dimethoxy ethane, 2-methoxyethyl ether, dimethylformamide, dimethylacetamide, acetonitrile, ethyl acetate, and isopropyl acetate;

in step (2), the reducing agent is selected from the group consisting of: Fe, Zn-Cu couple and Zn;

~~in step (2), the acid catalyst, when present, is selected from the group consisting of: acetic acid, propanoic acid, butyric acid, benzoic acid, toluene sulfonic acid, HCl, HBr, HI, and $H_2SO_4$;~~

in step (2), the suitable polar solvent comprises one polar solvent or a combination of two or more polar solvents; and is selected from the group consisting of: methanol, ethanol, propanol, ethyl acetate, propyl acetate, butyl acetate, isopropyl acetate, acetonitrile, tetrahydrofuran, dimethoxy ethane, and 2-methoxyethyl ether;

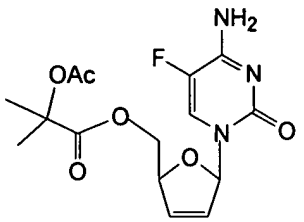
in step (3a) the activating agent is selected from the group consisting of: methanesulfonyl chloride, trifluoromethyl sulfonyl chloride, ethanesulfonyl chloride, benzenesulfonyl chloride, p-toluene-sulfonyl chloride, triazole/phosphorus oxychloride and triazole/diphenyl chloro-phosphate;

in step (3a) the amine base is selected from the group consisting of: triethylamine, tributylamine, N-methylmorpholine, N,N-diisopropyl-ethylamine, N,N-dimethylcyclohexylamine, N,N-diethylcyclohexylamine, N,N-dimethyloctylamine, tetramethylethylenediamine, pyridine, N,N-dimethyl-aminopyridine, 1,4-diazabicyclo[2.2.2]octane, 1,8-diazabicyclo[5.4.0]undec-7-ene, and 1,5-diazabicyclo[4.3.0]non-5-ene;

in step (3a) the leaving group LG is selected from the group consisting of methanesulfonyloxy, trifluoromethyl-sulfonyloxy, ethanesulfonyloxy, benzenesulfonyloxy, toluenesulfonyloxy, and triazolyl;

in step (3b) the aminating agent is selected from the group: $NH_3$, ammonium hydroxide, and ammonium carbonate.

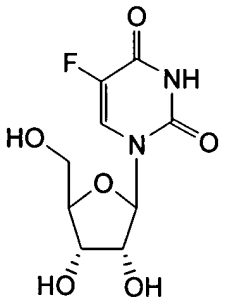
**43.** (Currently Amended) The process according to Claim 41, for the preparation of a compound of Formula (III-a):



(III-a)

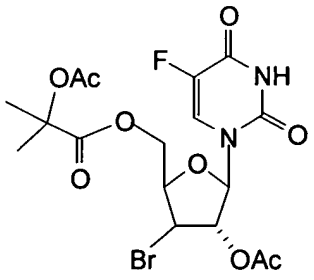
comprising:

(1) contacting a compound of Formula (V):

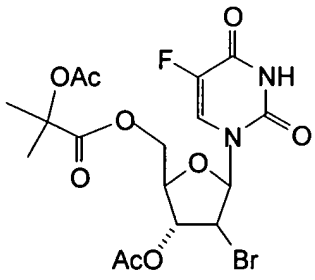


(V)

with 2-acetoxy-2-methyl-propionyl bromide in a suitable polar aprotic solvent to form a compound of Formula (VI-a), a compound of Formula (VI*-a), or a mixture of compounds of Formula (VI-a) and (VI*-a):

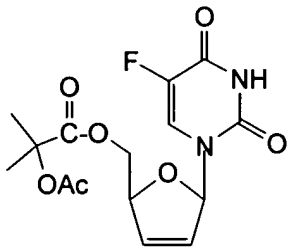


(VI-a)



(VI*-a)

(2) contacting the compound of Formula (VI-a), the compound of Formula (VI*-a), or the mixture of compounds of Formula (VI-a) and (VI*-a); with a reducing agent in a suitable polar solvent, ~~optionally in the presence~~ in the absence of ~~a suitable~~ an acid catalyst, to form a compound of Formula (VII-a);



(VII-a);

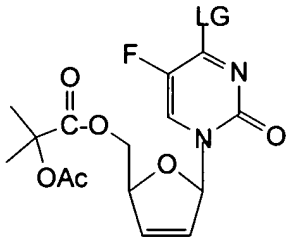
(3a) contacting the compound of Formula (VII-a) with a activating agent selected from the group consisting of:

i) an aryl sulfonyl halide,

ii) an alkyl sulfonyl halide, and

iii) 1,2,4-triazole in the presence of a phosphorus chloride;

in the presence of an amine base, to form a compound of Formula (VIII-a):



(VIII-a)

wherein LG is a leaving group derived from the activating agent; and

(3b) contacting the compound of Formula (VIII-a) with an aminating agent to form a compound of Formula (III-a).

**44.** (Currently Amended) The process of Claim 43 for the preparation of a compound of Formula (III-a), wherein:

in step (1), the suitable polar aprotic solvent comprises one polar aprotic solvent or a combination of two or more polar aprotic solvents; and is selected from the group consisting of: methylene chloride, tetrahydrofuran, t-butyl methyl ether, dimethoxy ethane, 2-methoxyethyl ether, dimethylformamide, dimethylacetamide, acetonitrile, ethyl acetate, and isopropyl acetate;

in step (2), the reducing agent is selected from the group consisting of: Fe, Zn-Cu couple and Zn;

~~in step (2), the acid catalyst, when present, is selected from the group consisting of: acetic acid, propanoic acid, butyric acid, benzoic acid, toluene sulfonic acid, HCl, HBr, HI, and $H_2SO_4$;~~

in step (2), the suitable polar solvent comprises one polar solvent or a combination of two or more polar solvents; and is selected from the group consisting of: methanol, ethanol, propanol, ethyl acetate, propyl acetate, butyl acetate, isopropyl acetate, acetonitrile, tetrahydrofuran, dimethoxy ethane, and 2-methoxyethyl ether; and

in step (3a) the activating agent is selected from the group consisting of: methanesulfonyl chloride, trifluoromethyl sulfonyl chloride, ethanesulfonyl chloride, benzenesulfonyl chloride, p-toluene-sulfonyl chloride, triazole/phosphorus oxychloride and triazole/diphenyl chloro-phosphate;

in step (3a) the amine base is selected from the group consisting of: triethylamine, tributylamine, N-methylmorpholine, N,N-diisopropyl-ethylamine, tetramethylethylenediamine, pyridine, N,N-dimethyl-aminopyridine, 1,4-diazabicyclo[2.2.2]octane, and 1,8-diazabicyclo[5.4.0]undec-7-ene;

in step (3a) the leaving group LG is selected from the group consisting of methanesulfonyloxy, trifluoromethyl-sulfonyloxy, ethanesulfonyloxy, benzenesulfonyloxy, toluenesulfonyloxy, and triazolyl; and

in step (3b) the aminating agent is selected from the group: $NH_3$, ammonium hydroxide, and ammonium carbonate.

**45.** (Currently Amended) The process of Claim 44 for the preparation of a compound of Formula (III-a), wherein:

in step (1), the suitable polar aprotic solvent comprises one solvent which is acetonitrile;

in step (2), the reducing agent is Zn-Cu couple;

~~in step (2), the acid catalyst, when present, is acetic acid;~~

in step (2), the suitable polar solvent comprises a combination of methanol and ethyl acetate;

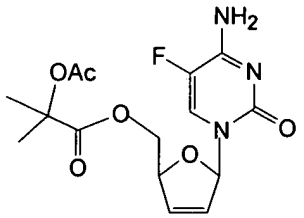
in step (3a) the activating agent is triazole/phosphorus oxychloride;

in step (3a) the amine base is triethylamine;

in step (3a) the leaving group LG is triazolyl; and

in step (3b), the aminating agent is $NH_3$.

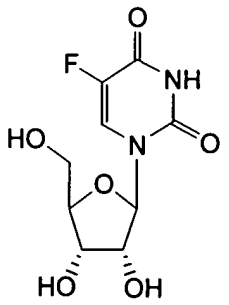
**46.** (Currently Amended) The process according to Claim 45, for the preparation of a compound of Formula (III-a):




(III-a)

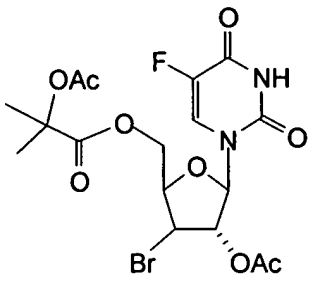
comprising:

(1) contacting a compound of Formula (V):

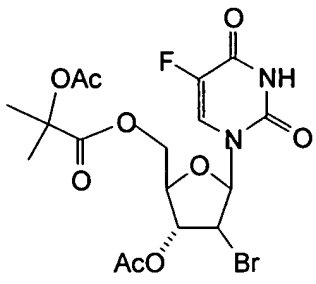



(V)

with 2-acetoxy-2-methyl-propionyl bromide in acetonitrile to form a compound of Formula (VI-a), a compound of Formula (VI* -a), or a mixture of compounds of Formula (VI-a) and (VI*-a):

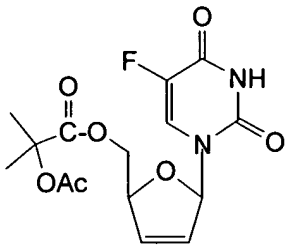


(VI-a)



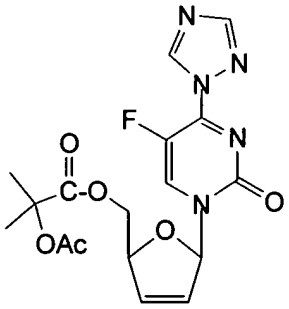
(VI*-a)

(2) contacting the compound of Formula (VI-a), the compound of Formula (VI*-a), or the mixture of compounds of Formula (VI-a) and (VI*-a); with Zn-Cu couple in a suitable polar solvent comprising a combination of methanol and ethyl acetate, wherein the ratio of methanol to ethyl acetate is in the range of 1:2 to 1:4~~; optionally in the presence of acetic acid~~, to form a compound of Formula (VII-a):



(VII-a);

(3a) contacting the compound of Formula (VII-a) with 1,2,4-triazole/phosphorus oxychloride, in the presence of triethylamine, to form a compound of Formula (VIII-a):

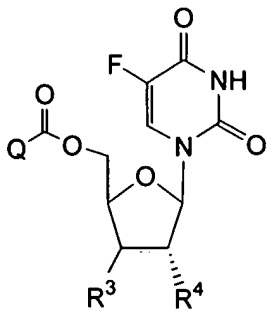


(VIII-a);

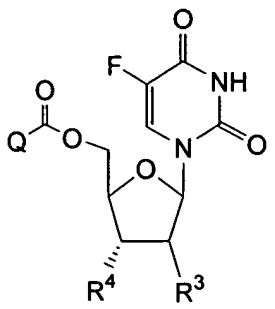
and

(3b) contacting the compound of Formula (VIII-a) with $NH_3$, to form a compound of Formula (III-a).

**47.** (Withdrawn) A compound of Formula (VI) or (VI*):



(VI)



(VI*)

or a pharmaceutically acceptable salt thereof, wherein:

Q is $R^1CH_2$- or $R^1CH_2C(=O)OC(R^2)_2$–;

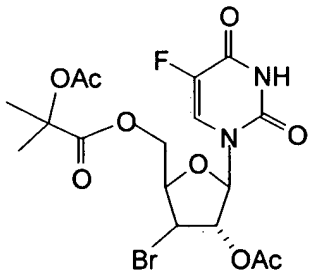
$R^1$ is H or $C_1$-$C_6$ alkyl;

$R^2$ is independently selected from methyl, ethyl, and propyl;

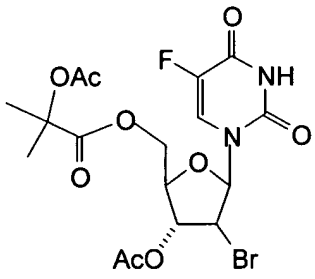
$R^3$ is Cl, Br, or IV; and

$R^4$ is $R^1CH_2C(=O)O$–.

**48.** (Withdrawn) A compound of Claim 47 of Formula (VI-a) or (VI*-a):



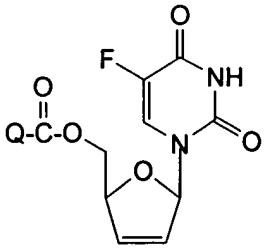
(VI-a)



(VI*-a)

or a pharmaceutically acceptable salt thereof.

**49.** (Withdrawn) A compound of Formula (VII):



(VII)

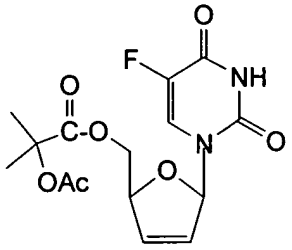
or a pharmaceutically acceptable salt thereof, wherein:

Q is $R^1CH_2$- or $R^1CH_2C(=O)OC(R^2)_2$–;

$R^1$ is H or $C_1$-$C_6$ alkyl; and

$R^2$ is independently selected from methyl, ethyl, and propyl.

**50.** (Withdrawn) A compound of Claim 49 of Formula (VII-a):

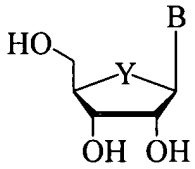


(VII-a)

or a pharmaceutically acceptable salt thereof.

**51.** (Withdrawn) A process for the preparation of a β-D- and β-L-2',3'-dideoxy-2',3'-didehydro-nucleoside comprising:

a) activating a compound of structure (1)



(1)

wherein B is a pyrimidine or purine base; and

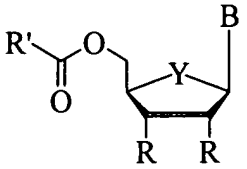
Y is O, S or $CH_2$;

with an acyl halide of the formula X-C(=O)$R^1$, X-C(=O)C($R^1$)$_2$OC(=O)$R^1$ or X-C(=O)phenylC(=O)O$R^1$;

wherein X is a halogen (F, Cl, Br or I), and

each $R^1$ is independently hydrogen, lower alkyl, alkyl, aryl or phenyl;

to form a compound of structure (2)

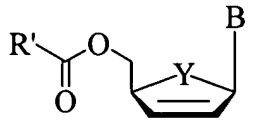


(2)

wherein R' is $R^1$, $-C(R^1)_2OC(=O)R^1$ or -phenylC(=O)$OR^1$; and

at least one R is halogen (F, Cl, Br or I), and at least one R is an acyl of the formula -$OC(=O)R^1$; and then

b) reducing the compound of structure (2) with a reducing agent to form a 2',3'-dideoxy-2',3'-didehydro-nucleoside of structure (3)




(3)

c) optionally deprotecting the nucleoside if necessary.

**52.** (Withdrawn) The process of Claim 51, wherein B is 5-fluorouracil or 5-fluorocytosine.

**53.** (Withdrawn) The process of Claim 51, wherein Y is O.

**54.** (Withdrawn) The process of Claim 51, wherein the β-D- and β-L-2',3'-dideoxy-2',3'-didehydro-nucleoside is D4FC.

**55.** (Withdrawn) The process of Claim 51, wherein the β-D- and β-L-2',3'-dideoxy-2',3'-didehydro-nucleoside is β-D-D4FC.

**56.** (Withdrawn) The process of Claim 51, wherein the β-D- and β-L-2',3'-dideoxy-2',3'-didehydro-nucleoside is β-D-D4FC.

**57.** (Withdrawn) The process of Claim 51, further comprising reducing the β-D or β-L-2',3'-dideoxy-2',3'-didehydro-nucleoside into a β-D or β-L-2'- or 3'-deoxyribo-nucleoside.

**58.** (Withdrawn) The process of Claim 51, further comprising converting the β-D or β-L-2',3'-dideoxy-2',3'-didehydro-nucleoside bearing a different nucleobase.

**59.** (Withdrawn) The process of Claim 58, wherein the β-D or β-L-2',3'-dideoxy-2',3'-didehydro-nucleoside is β-D or β-L-2',3'-dideoxy-2',3'-didehydro-5-fluorouridine which is converted to a β-D or β-L-2',3'-dideoxy-2',3'-didehydro-5-fluorocytidine.

**60.** The process of claims 1 or 29 wherein the compound of Formula (IV) is in the form of a β-D-enantiomer.

**61.** The process of claims 19 or 41 wherein the compound of Formula (III) is in the form of a β-D-enantiomer.

**62.** The compound of claim 25 wherein the compound of Formula (II) or (II*) is in the form of a β-D-enantiomer.

**63.** The compound of claim 26 wherein the compound of Formula (II-a) or (II*-a) is in the form of a β-D-enantiomer.

**64.** The compound of claim 27 wherein the compound of Formula (III) is in the form of a β-D-enantiomer.

**65.** The compound of claim 28 wherein the compound of Formula (III-a) is in the form of a β-D-enantiomer.